

**METHOD OF PROVIDING POWER TO  
FIELD PROGRAMMABLE GATE ARRAY MODULES**

**ABSTRACT OF THE DISCLOSURE**

A module standard for FPGAs is provided in which power supply voltages for  
5 daughtercards are not fixed in advance. Instead programmable power supplies are provided and a  
method is provided in which each daughtercard can specify the required power supply voltage.  
Thus, unlike prior-art systems, this modular system is backward and forward compatible with  
FPGA chips from many process generations allowing easy upgrading as new FPGA families  
become available. A motherboard or baseboard for use with this invention includes a plurality of  
10 module connectors into which compatible modules or “daughtercards” can be plugged and a  
plurality of programmable power supplies. In a preferred embodiment there are four sets of  
module connectors and sixteen programmable power supplies. This allows each module to have  
four independently specifiable power supply voltages. A module may also connect several power  
supplies together in order to obtain higher current at a single voltage. Various schemes are  
15 described to ensure that the programmable power supplies will never deliver too high a voltage  
to the components on the modules.